

Remarks

Reconsideration and allowance of the present patent application based on the foregoing amendments and following remarks are respectfully requested.

In the pending Final Office Action, the Examiner rejected claims 1, 3, 4, and 6, under 35 U.S.C. §102(b), as allegedly being anticipated by Malamud '890; rejected claim 2, under 35 U.S.C. §103(a), as allegedly being unpatentable over Malamud '890 in view of Lambert '922; rejected claim 5, under 35 U.S.C. §103(a), as allegedly being unpatentable over Malamud '890 in view of Niwa '320. The Examiner also objected to claims 1-6 for minor informalities.

By this Amendment, claims 1, 4, and 5 have been amended for form and clarity and new claim 7 has been added. No new matter has been introduced. As such, claims 1-7 are currently presented for examination, of which claims 1, 4, and 7 are independent.

By virtue of the changes to the claims, the objections thereto have been overcome and the immediate withdrawal of the objections is respectfully requested.

Applicants respectfully traverse the §102(b) and §103(a) rejections, for the following reasons:

I. Rejections Under §102(b) & §103(a).

As noted above, claim 1 is directed to an X-ray tomography and comprises an X-ray generator being fixed, having a function of moving a focal position and radiating X-rays toward a subject, a planar X-ray image receiving element for receiving a plurality of transmission images of the subject formed by the X-rays radiated from the X-ray generator while the focal position is moved, the planar X-ray image receiving element being fixed, and an image processing section for creating a tomographic image by processing the plurality of transmission images of the subject received by the X-ray image receiving element.

Applicants submit that these features are amply supported and described by the embodiments disclosed throughout the written description. In the X-ray tomograph, the subject is fixed between the X-ray generator and the planar X-ray image receiving element

and the X-ray generator has a radiation plane which is parallel to the planar X-ray image receiving element, and the focal position of the X-ray generator is rotatable on a circumference on the radiation plane. In addition, *the image processing section cuts out images from individual transmission images corresponding to individual focal positions of the X-ray generator and accumulates the cut-out images to create an accumulated image, the cut-out image has a virtual center which is positioned on a circumference with a radius R from a center of the transmission image, and the radius R is larger than a pixel of the accumulated image* (or the transmission image).

The disclosed embodiments provide a configuration in which tomographic images of the subject can be obtained easily without disposing a movable mechanism for moving the X-ray generator, the X-ray image receiving element or the subject. For example, a tomographic image of a soft subject can also be securely obtained. Besides, the tomographic images corresponding to the individual tomographic planes can be obtained by rotating the moving a focal position along the circumference, so that a photographing speed of the tomographic image can be enhanced, and the time required to obtain the tomographic image can be decreased, regardless of the size of the subject in comparison with the method to rotate and translate the X-ray generator or the subject.

Applicant submits that none of the references, whether taken alone or in combination, suggest each and every element of claim 1 including, for example, the features noted above. For example, the primary reference, Malamud '890 discloses an imaging apparatus comprising an X-ray generator having the function of moving a focal position and radiating X-rays toward a subject, an X-ray image receiving element for receiving a plurality of transmission images of the subject formed by the X-rays radiated from the X-ray generator, and an image processing section for creating a tomographic image by processing the plurality of transmission images of the subject received by the X-ray image receiving element. In particular, Malamud '890 teaches that shifting circuit 58 shifts each of the four sub-images by a half pixel along the appropriate lateral and vertical directions and then combining processor 60 loads the shifted images into the image memory 62. (See, Malamud '890: col. 4, lines 15-18).

However, there is nothing in Malamud '890 that remotely suggests that *the image processing section cuts out images from individual transmission images corresponding to individual focal positions of the X-ray generator and accumulates the cut-out images to create an accumulated image, the cut-out image has a virtual center which is positioned on a circumference with a radius R from a center of the transmission image, and the radius R is larger than a pixel of the accumulated image*, as required by claim 1.

Applicants further submit that the remaining references, namely Lambert '922 and Niwa '320, fail to cure the deficiencies of Malamud '890 noted above and fail in their own right to suggest each and every element of claim 1. Thus, for at least these reasons, Applicant submits that claim 1 is clearly patentable over the asserted references. And, because claims 2-3 depend from claim 1, claims 2-3 are patentable at least by virtue of dependency as well as for their additional recitations.

Moreover, because independent claims 4 and 7 recite similar patentable features as claim 1, claims 4 and 7 are patentable at least for similar reasons as claim 1. And, because claims 5-6 depend from claim 4, claims 4-5 are patentable at least by virtue of dependency as well as for their additional recitations.

Accordingly, the immediate withdrawal of the §102(b) and §103(a) rejections is respectfully requested.

Conclusion

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

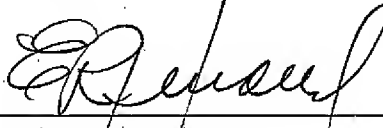
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

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Respectfully submitted,

By:



E. Rico Hernandez
Registration No. 47,641

Customer No. 00909

PILLSBURY WINTHROP SHAW PITTMAN LLP
P.O. Box 10500
McLean, Virginia 22102
Main: 703-770-7900
Direct Dial: 703-770-7788
Fax: 703-770-7901